NOTES ON THE SPOTTED BAT (*EUDERMA MACULATUM*) FROM SOUTHWEST UTAH

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Abstract.— In May 1974 four male spotted bats were netted near St. George, Utah. Contrary to published speculation on *Euderma*, indications are that the spotted bat in southwest Utah (1) is not a late flyer, (2) does not feed solely on moths, (3) may drop to the ground on occasion to forage, (4) is not a rapid flyer, and (5) appears to utilize crevices as roosting sites.

The spotted bat (*Euderma maculatum*) has been reported from the southwestern United States by several biologists. Easterla (1970) collected *Euderma* in Big Bend National Park, Texas. Durant (1935), Hardy (1941), Benson (1954), and Easterla (1965) discussed the spotted bat in Utah. A specimen from Las Vegas, Nevada, was reported by Hall (1935). Jones (1961), Constantine (1961), Rodeck (1961), and Findley and Jones (1965) gave accounts of the spotted bat from New Mexico, while Vorhies (1935) noted it from Arizona. Little natural history information on *Euderma* is available, leaving the field open to much speculation.

Four spotted bats were netted between 21 and 23 May 1974 in Fort Pierce Wash, approximately eight miles southeast of St. George, Washington County, Utah (113° 25′ W, 37° 00′ N). All were captured over scattered pools averaging only 25 cm in depth and 3-5 m in width.

This locality is in the Lower Sonoran Life Zone, with an average rainfall of 150 mm. Vegetation consists primarily of creosote bush (*Larrea tridentata*), snakeweed (*Gutierrezia microcephala*), blackbrush (*Coleogyne ramosissima*), bursage (*Franseria dumosa*), and scattered *Yucca*. Riparian vegetation in the wash is mainly salt cedar (*Tamarix pentandra*), creosote bush, and desert willow (*Chilopsis linearis*).

All spotted bats obtained were males, none with scrotal testes. On 21 May two *Euderma maculatum* were netted between 2215 hr and 2230 hr. The following night another was captured at precisely 2230 hr, and the fourth was netted on 23 May at 2228 hr. Preliminary indications are that the spotted bat is not a late flyer in southwestern Utah. This conflicts with reports by Easterla (1965), who suggests that *Euderma* is a late flyer and that most can therefore be captured after midnight.

The first spotted bat obtained was marked with *Pelikan*, black water-resistant ink, near the base of the tail on the uropatagium, and the remaining three were marked by perforating the plagiopatigum with small holes, 3 mm in diameter. No recaptures were obtained. Measurements of one live male were taken: total length, 120 mm; tail length, 60 mm; hindfoot, 11 mm; and ear, 35 mm.

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One individual was placed in a cardboard box containing a damp towel and several unidentified moths and retained until the following evening. None of the food was consumed by the bat. But prior to release the bat was in excellent physical condition and its behavior was assumed to be normal. On 22 May the *Euderma* was released near Fort Pierce Wash at 2020, approximately 55 minutes before dark. We were positioned to follow its flight, hoping to locate a nearby roost.

The *Euderma* flew slowly and directly southward, toward the sloping valley wall (Fig. 1). (Having observed a high rate of injury among captured specimens, Easterla [1965] concluded that the spotted bat was probably a rapid flyer.)

While in flight, the *Euderma* appeared to be feeding on small insects within two meters of the ground. Suddenly it dropped to the ground and seized and ate a grasshopper; and within ten seconds it was again in flight. A second plunge to the rocky terrain was observed. (Prior to this observation, reports on food habits of the

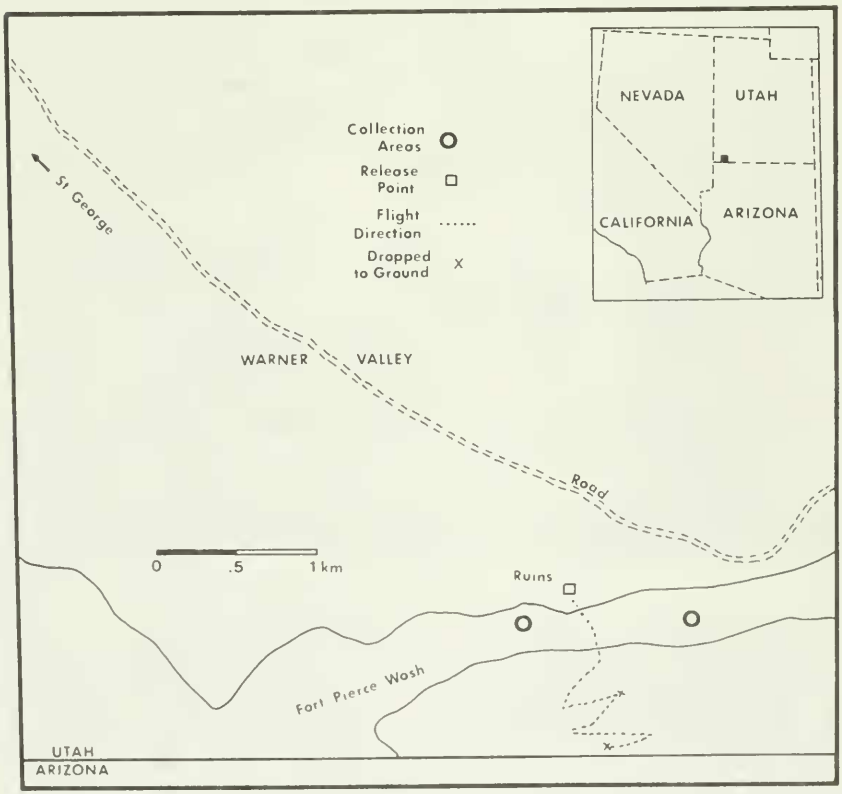

Fig. 1. The Washington Co., Utah, study site where spotted bat flight and behavior was observed.

spotted bat indicated that the diet was highly selective, consisting only of moths [Ross, 1961; Easterla, 1965; and Barbour and Davis, 1969a]. Easterla [1965] went so far as to speculate that the bat ate only moths of the family *Noctuidae*.) The descents to the ground were preceded by split-second hovering.

After four minutes of cruising and feeding over the low-lying vegetation, the spotted bat disappeared near a crevice only 300 m from the point of release. We were unable to approach the apparent roost before nightfall due to the rough terrain.

More detailed studies are currently under way. We feel that the population in the region is high as compared with estimates in previous reports on the spotted bats. Indications are that density may be higher in Mohave County, Arizona, where a similar habitat exists in close proximity to Fort Pierce Wash.

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